

WHAT IS CLAIMED IS:

1 1. A circuit board comprising:
2 a first plane;
3 a second plane;
4 a via spanning said first and second plane; and
5 an impedance component placed in said via and coupled to said first plane and said
6 second plane.

1 2. The circuit board of claim 1, wherein said impedance component is a resistor.

1 3. The circuit board of claim 1, wherein said impedance component is a capacitor.

1 4. The circuit board of claim 1, wherein said first plane is a power plane and said second
2 plane is a ground plane.

1 5. The circuit board of claim 1, wherein said first plane is a signal plane.

1 6. The circuit board of claim 2, wherein said resistor comprises:
2 rolled carbon material having a first end and a second end; and
3 a first conductive cap coupled to said first end, and a second conductive cap coupled to
4 said second end;
5 wherein said first conductive cap is coupled to said first plane, and said second
6 conductive cap is coupled to said second plane.

1 7. The circuit board of claim 3, wherein said capacitor comprises:
2 a rolled sandwich comprising dielectric material and conductive material and having an
3 interior and an exterior; and
4 a first conductive cap coupled to said interior, and a second conductive cap coupled to
5 said exterior;
6 wherein said first conductive cap is coupled to said first plane, and said second
7 conductive cap is coupled to said second plane.

1 8. A method of adding impedance to a circuit board having a first plane, a second plane,
2 and a via spanning said first and second plane, said method comprising:
3 forming an impedance component having a first conductive cap and a second conductive
4 cap;
5 placing said impedance component in said via; and
6 coupling said first cap to said first plane and said second cap to said second plan.

1 9. The method of claim 8, wherein said impedance component is a resistor.

1 10. The method of claim 8, wherein said impedance component is a capacitor.

1 11. The method of claim 8, wherein said first plane is a power plane and said second
2 plane is a ground plane.

- 1 12. The method of claim 8, wherein said first plane is a signal plane.
- 1 13. The method of claim 8, wherein said via has a first height and a first diameter, and
2 wherein said impedance component has a second height substantially equal to said first height
3 and a second diameter substantially equal to said first diameter.
- 1 14. A circuit board comprising:
 - 2 a plurality of planes;
 - 3 a via spanning at least two of said planes; and
 - 4 an impedance component placed in said via and coupled to at least two of said planes.
- 1 15. The circuit board of claim 14, wherein said impedance component is a resistor.
- 1 16. The circuit board of claim 14, wherein said impedance component is a capacitor.
- 1 17. The circuit board of claim 14, wherein one of said planes is a power plane and one of
2 said planes is a ground plane.
- 1 18. The circuit board of claim 14, wherein one of said planes is a signal plane.
- 1 19. The circuit board of claim 15, wherein said resistor comprises:
 - 2 rolled carbon material having a first end and a second end; and

3 a first conductive cap coupled to said first end, and a second conductive cap coupled to
4 said second end;

5 wherein said first conductive cap is coupled to one of said planes, and said second
6 conductive cap is coupled to a different one of said planes.

1 20. The circuit board of claim 16, wherein said capacitor comprises:
2 a rolled sandwich comprising dielectric material and conductive material and having an
3 interior and an exterior; and
4 a first conductive cap coupled to said interior, and a second conductive cap coupled to
5 said exterior;
6 wherein said first conductive cap is coupled to one of said planes, and said second
7 conductive cap is coupled to a different one of said planes.